

Docket No. 286006US0PCT



MAIL STOP PCT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Markus BOLD, et al.

SERIAL NO: 10/568,344

GAU:

FILED: February 14, 2006

EXAMINER:

FOR: TRANSITION METAL COMPLEXES COMPRISING CARBENE LIGANDS SERVING AS EMITTERS FOR ORGANIC LIGHT-EMITTING DIODES (OLED'S)

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s), published application(s) or issued patent(s) which may be related to the present application. In accordance with the waiver of 37 CFR 1.98 dated September 21, 2004, copies of the cited pending applications are not provided. Cited published and/or issued patents, if any, are listed on the attached PTO form 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

Norman F. Oblon

Registration No. 24,618  
Corwin P. Umbach, Ph.D.  
Registration No. 40,211

Customer Number

22850

Tel. (703) 413-3000  
Fax. (703) 413-2220  
(OSMMN 05/03)

Surinder Sachar  
Registration No. 34,423

Form PTO 1449  
(Modified)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY DOCKET NO.  
286006US0PCTSERIAL NO.  
10/568,344

## LIST OF REFERENCES CITED BY APPLICANT

APPLICANT  
Markus BOLD, et al.FILING DATE  
February 14, 2006

GROUP

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	6 160 267	12/12/00	KUNUGI et al.			
	AB	6 338 977	01/15/02	KUNUGI et al.			
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	AO	02/15645	02/21/02	WO		NO
	AP	01/41512	06/07/01	WO		NO
	AQ	00/70655	11/23/00	WO		
	AR					
	AS					
	AT					
	AU					
	AV					

## OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	AW	LAI, Siu-Wai, et al., "Carbene and Isocyanide Ligation at Luminescent Cyclometalated 6-Phenyl-2,2'-bipyridyl Platinum (II) Complexes: Structural and Spectroscopic Studies", Organometallics, Vol. 18, Pages 3327-3336, 1999.	
	AX	LIU, Qing-Xiang et al., "Synthesis, crystal structure and photophysical properties of N-heterocyclic carbene Pd(II), Pt(II) complexes and iodine adduct", Polyhedron, Vol. 22, Pages 1515-1521, 2003.	
	AY	LAI, Siu-Wai et al., "Luminescent metal complexes derived from carbene and related ligands: tuning excited-state properties with metal-carbon multiple bonds", Journal of Organometallic Chemistry, Vol. 617-618, Pages 133-140, 2001.	
	AZ	LAI, Siu-Wai et al., "[Pt(CN) (C10H21N4))6]: A Luminescent Hexanuclear Platinum (II) Macrocyclic Containing Chelating Dicarbene and Bridging Cyanide Ligands", Angew. Chem. Int. Ed., Vol. 37, No. 1/2, Pages 182-184, 1998.	<input checked="" type="checkbox"/> Additional References sheet(s) attached

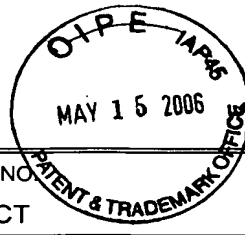
Examiner

Date Considered

\*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form PTO 1449 (Modified)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO. 286006US0PCT	SERIAL NO. 10/568,344
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OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)			
	AAA	XUE, Wen-Mei et al., "Spectroscopic and Excited-State Properties of Luminescent Rhenium (I) N-Heterocyclic Carbene Complexes Containing Aromatic Diimine Ligands", Organometallics, Vol. 17, Pages 1622-1630, 1998.	
	AAB	HITCHCOCK, Peter B. et al., "Synthesis of Homooleptic Tris (organo-Chelate) Iridium (III) Complexes by Spontaneous ortho-Metallation of Electron-Rich Olefin-Derived N, N'-Diarylcarbene Ligands and The X-Ray Structures of fac-[Ir{CN(C6H4Me-p) (CH2)2 NC6H3Me-p}3] And Mer-[Ir {CN(C6H4Me-p) (CH2)2 NC6H3Me-p}2 {CN(C6H4Me-p) (CH2)2 NC6H4Me-p} ]Cl (A Product of HCl Cleavage)", Journal of Organometallic Chemistry, Vol. 239, Pages C26-C30, 1982.	
	AAC	GRUENDEMANN, Stephan et al., "Abnormal Ligand Binding and Reversible Ring Hydrogenation in the Reaction of Imidazolium Salts with IrH5 (PPh3)2, J. Am. Chem., Vol. 124, Pages 10473-10481, 2002.	
	AAD	CHIANESE, Anthony R. et al., "Rhodium and Iridium Complexes of N-heterocyclic Carbenes via Transmetalation: Structure and Dynamics", Organometallics, Vol. 22, Pages 1663-1667, 2003.	
	AAE	WESKAMP, Thomas et al., "N-heterocyclic carbenes: novel ruthenium-alkylidene complexes, Journal of Organometallic Chemistry, Vol. 582, Pages 362-365, 1999.	
	AAF	COLEMAN, Karl S. et al., "Silver (I) complex of a new imino-N-Heterocyclic carbene and ligand transfer to Palladium (II) and rhodium (I), " Dalton Trans., Pages 2917-2922, 2003.	
	AAG	DOUTHWAITE, Richard E. et al., "Cationic and neutral palladium (II) methyl complexes of di-N-Heterocyclic carbenes", J. Chem. Soc., Dalton Trans., Pages 1386-1390, 2002.	
	AAH	DANOPOULOS, Andreas A. et al., "C-H activation with N-heterocyclic carbene complexes of iridium and rhodium", J. Chem. Soc., Dalton Trans., Pages 3090-3091, 2002.	
	AAI	YAM, Vivian Wing-Wah et al., "Unprecedented luminescence behaviour and structural Characterization of a novel class of ruthenium (II) 2,2'- bipyridine complexes with orthometallated aminocarbene ligands", Chem. Commun., Pages 2261-2773, 1998.	
	AAJ	YAM, Vivian Wing-Wah et al., "Synthesis, structure, luminescence and electrochemical studies of a novel class of ruthenium (II) polypyridine complexes with ortho-metallated aminocarbene ligands", J. Chem. Soc., Dalton Trans., Pages 1911-1919, 2001.	
	AAK	HERRMANN, Wolfgang A. et al., "Metal Complexes Of Stable Carbenes", Advanced in organometallic Chemistry, Vol. 48, Pages 1-69, 2001.	
	AAL	HERRMANN, Wolfgang A. et al., "N-Heterocyclische Carbene", Angew. Chem., Vol. 109, Pages 2257-2282, 1997.	
	AAM	BOURISSOU, Didier et al., Stable Carbenes", Chem. Rev., Vol. 100, Pages 30-91, 2000.	
	AAN	SCHOLL, Matthias et al., "Synthesis and Activity of a New Generation of Ruthenium-Based Olefin Metathesis Catalysts Coordinated with 1,3-Dimesityl-4,5-dihydroimidazol-2-ylidene Ligands", Organic Letters, Vol. 1, No. 6, Pages 953-956, 1999.	
	AAO	BOEHM, Volker P. W. et al., "Eine Nickel-katalysierte Kreuzkupplung von Arylchloriden mit Aryl-Grignard-Reagentien", Angew. Chem., Vol. 112, Pages 1672-1674, 2000.	
	AAP	DIECK, Heindirk Tom et al., "Kupfe (I)-diazabutadien-halogenide", Chem. Ber., Vol. 104, Pages 92-109, 1971.	
	AAQ	JAFARPOUR, Laleh et al., "A sterically demanding nucleophilic carbene: 1, 3-bis (2,6-diisopropylphenyl)imidazol-2-ylidene). Thermochemistry and catalytic application in olefin metathesis", Journal of Organometallic Chemistry, Vol. 606, Pages 49-54, 2000.	
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OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	AAR	CHAKRABARTY, Manas et al., "On attempted oxidative cyclisation of isomeric N,N'-diphenylphenylenediamines and their N,N'-dimethyl derivatives by palladium (II) acetate and uv light", Synthetic Communications, Vol. 30, No. 20, Pages 3651-3668, 2000.					
	AAS	FOLEY, Timothy J. et al., "Facile Preparation and Photophysics of Near-Infrared Luminescent Lanthanide (III) Monoporphyrinate Complexes", Inorganic Chemistry Vol. 42, Pages 5023-5032, 2003.					
	AAT	LU, Wei et al., "[ $(C \wedge N \wedge N) Pt(C \equiv C)_n R$ ] ( $HC \wedge N \wedge N = 6\text{-aryl-2, 2'-bipyridine}$ , $n = 1-4$ , $R = \text{aryl, SiMe}_3$ ) as a new class of light-emitting materials and their applications in electrophosphorescent devices", Chem. Communication, Pages 206-207, 2002.					
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Docket No. 286006 US



#### STATEMENT OF RELEVANCY

- 1) References AW - AZ & AAA - AAG have been cited in the International Search Report. A copy of these references is being submitted herewith.
- 2) References AAS - AAT have been cited in the corresponding International Preliminary Examination Report. A copy of these references is being submitted herewith.
- 3) References AA - AB, AO - AQ, AAH - AAQ & AAR are discussed in the specification. A copy of these references is being submitted herewith.
- 4) References            are additional prior art known to Applicant. A copy of these references is being submitted herewith.